

bisexual men, 16 (5%) of whom had antibody to HIV-1).

To assess further this apparently low prevalence of antibody to HIV-1 in our population, we carried out an anonymous screening survey with the consent of 500 consecutive attenders at the genitourinary medicine clinic in the Royal Victoria Hospital during June 1988. All participants answered a questionnaire about their sexual history and other risk factors for acquiring HIV infection. People who did not wish to have a blood sample taken were asked to answer the questionnaire, but were excluded from analysis. HIV-1 antibody testing was by the Organon-Teknika Vironostika antibody to HTLV III microelisa system. All 500 people (250 men and 250 women) who completed the questionnaire and gave consent to a blood sample being taken had negative results. The mean numbers of sexual partners in the previous year were 3.0 for men and 1.6 for women and the mean numbers of sexual partners in their lifetime were 12.0 for men and 5.3 for women.

The risk factors of the 500 participants are shown in the table. Thirteen (5.2%) of the men admitted to homosexual contact, but only 10 had had anal intercourse in their lifetime. Twenty one (8.4%) of the women had had anal intercourse in their lifetime. Sexual intercourse with people from the USA, Central Africa, or London had been experienced by 82 of the participants in the previous 10 years. For the purposes of this study these had been regarded as areas of potentially high risk for acquiring HIV-1 infection. The low percentage of intravenous drug usage, or sex with an intravenous drug user, was in keeping with the known low prevalence of intravenous drug usage in Northern Ireland.<sup>1</sup>

Six men and 21 women also answered the questionnaire but refused to have a blood

sample taken. From the answers to their questionnaires none of them had any recognised high risk factors for acquiring HIV.

The finding that 500 patients attending a sexually transmitted disease clinic did not have antibody to HIV-1 adds further to the evidence that Northern Ireland is a region of low prevalence of antibody to HIV-1. The behaviour of these patients did not appear to put them at particularly high risk, but the two factors that we would highlight were firstly that anal intercourse in women appeared to be relatively common and that future education programmes should highlight the increased risk of acquisition of HIV associated with this sexual practice.<sup>2</sup> Secondly, sexual contact with those coming from areas of high seroprevalence will inevitably lead to an increased incidence of infection, so strenuous efforts should be made to bring this factor to the attention of the public of Northern Ireland.

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TO THE EDITOR, *Genitourinary Medicine*

#### Seroprevalence of HIV-I is much higher in young women than men in central Africa

Sir,

Different authors have emphasised the equal incidence of human immunodeficiency virus type I (HIV-I) infection in men and women in Africa because of its heterosexual transmission.<sup>1-5</sup>

In 1986 and 1987, using a cluster sampling method,<sup>6</sup> we performed two serosurveys in randomised populations aged 15-44 in Bangui, capital of the Central African Republic. Antibodies to HIV-I were detected in sera using western blot (LAV blot, Diagnostic Pasteur). Both serosurveys showed a significantly higher incidence of HIV-I in women

than in men. In 1986, 1.4% (5/354) of men and 5.5% (32/536) of women had antibodies to HIV-I ( $p < 0.001$ ). In 1987, 3.5% (6/173) of men versus 11.4% (24/210) of women had HIV-I antibodies ( $p < 0.02$ ).

Any possible bias due to a difference in age distribution has been eliminated by presenting results for the patients in three age groups (15-24, 25-34, and 35-44). The distribution of the population between these three groups was identical for men and women in both years, and the table gives data on seroprevalence in each sex. Seroprevalence was significantly higher in women than men aged 15-24 ( $p < 0.01$ ). When considering subjects aged 25-44, however, no significant difference between the two sexes was observed, though the incidence was higher in women.

The higher incidence of HIV infection in women, and mainly in young women, might have been due to earlier and greater sexual activity than in men, or because of bias in the selection of the women. To verify this hypothesis we compared the incidence of two other sexually transmitted diseases, syphilis and hepatitis B. Syphilis was diagnosed using the *Treponema pallidum* haemagglutination assay (TPHA, Laboratoire Behring) with a titre of 1/160 considered as the limit of a positive reaction. Hepatitis B was diagnosed by finding hepatitis B surface antigen (HBsAg) by a third generation enzyme linked immunosorbent assay (ELISA, Kit Monolisa Ag HBS, Diagnostic Pasteur). The table shows the results by sex and age. The incidence of HBsAg was higher in men than in women in each age group for the two years. The difference was significant for the totals in 1986, and for the group aged 35-44 in 1987. Similarly, the incidence of syphilis was higher, or at least the same, in men than women in each age group and for the totals in both years, except in the 15-24 age group in 1987. The difference was not significant, however, except in one age group (25-34 in 1987).

These findings need to be extended. The incidence of other STD, such as syphilis and hepatitis B, seems to be higher in men than in women, though the difference is not always significant. At the opposite the incidence of HIV infection is significantly higher in women than in men. This fact reinforces the assumption (so far poorly documented) that men are more likely than women to transmit HIV (Taelman H, *et al*, unpublished observation).<sup>7</sup>

Yours faithfully,  
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Table Possible risk factors for acquiring human immunodeficiency virus (HIV) in 500 people attending genitourinary medicine clinic (figures are numbers (percentages) of people with specified risk factor)

Risk factors	Men (n = 250)	Women (n = 250)
History of intravenous drug use	4 (1.6)	2 (0.8)
Sexual contact with intravenous drug user	2 (0.8)	4 (1.6)
Homosexual or bisexual	13 (5.2)	0
Anal intercourse in past 10 years	10 (4)	21 (8.4)
Bisexual contact	0	4 (1.6)
Sexual contact in risk area in past 10 years	52 (20.8)	30 (12)

Table Seroprevalence of infection with human immunodeficiency virus type 1 (HIV-1) or hepatitis B and of syphilis, by sex and age group (figures are numbers (percentages) of patients)

	15-24 years		25-34 years		35-44 years		Totals	
	Men	Women	Men	Women	Men	Women	Men	Women
No (%) tested in 1986	213 (60.2)	344 (58.7)	100 (28.2)	172 (29.4)	41 (11.6)	70 (11.9)	354	586
No (%) positive for:								
HIV-1	1* (0.5)	20 (5.8)	3 (3)	9 (5.2)	2 (4.9)	3 (4.3)	5* (1.4)	32 (5.5)
Hepatitis B	53 (24.9)	63 (18.3)	29 (29)	35 (20.3)	9 (22.0)	12 (17.1)	91** (25.7)	110 (18.8)
Syphilis	16 (7.5)	26 (7.6)	23 (23)	31 (18.0)	12 (29.3)	13 (18.6)	51 (14.4)	70 (11.9)
No (%) tested in 1987	105 (61)	124 (59)	42 (24)	56 (27)	26 (15)	30 (14)	173	210
No (%) positive for:								
HIV-1	1*** (1)	11 (8.9)	3 (7.1)	7 (12.5)	2 (7.7)	6 (20)	6** (3.5)	24 (11.4)
Hepatitis B	29 (27.6)	30 (24.2)	8 (19.0)	8 (14.3)	10**** (38.5)	4 (13.3)	47 (27.2)	42 (20)
Syphilis	3**** (2.9)	13 (10.5)	13** (31)	6 (10.7)	7 (26.9)	7 (23.3)	23 (13.3)	26 (12.4)

\*p < 0.001, \*\*p < 0.02, \*\*\*p < 0.01, \*\*\*\*p < 0.05.

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TO THE EDITOR, *Genitourinary Medicine*

#### Cervical cytological examination of adolescent girls

Sir,  
Epidemiological studies have shown that one of the key variables that discriminated between women with and without cervical cancer was coitarche at younger than 17.<sup>1</sup> Cervical epithelium that is undergoing metaplasia in adolescents may be particularly vulnerable to sexually transmitted oncogenic agents. Previous studies have only focused

on sexually transmitted diseases in adolescent girls.<sup>23</sup>

Of 379 adolescent girls aged 15 or 16 who presented to the department of genitourinary medicine in Sheffield in 1984-7, 245 underwent routine cervical cytological examination while being screened for sexually transmitted genital infections. Abnormal results were found in 69 (28.2%), 39 (15.9%) of them were reported as having wart virus infection and a further 21 (8.6%) as having mild to moderate dysplasia. Colposcopically directed biopsies of the 21 girls with cervical dysplasia showed that 19 had wart virus infection without evidence of cervical intraepithelial neoplasia. The remaining two girls were reported as having normal epithelium.

A high proportion of girls studied had at least one sexually transmitted disease (table); 48 (19.6%) yielded more than one genital pathogen whereas only 30 (12.2%) had no lower genital tract infection.

Adolescent girls accounted for 2.1% (379/18 050) of the total new female patients presenting to the clinic during the same time, yet a high proportion (23.7%, 58/245 under-

going cervical cytology) were found to have cervical wart virus infection diagnosed either on routine cervical cytology or colposcopically directed biopsy in the investigation of a dysplastic smear. A strong association between wart virus infection of the cervix and cervical cancer is widely accepted.<sup>45</sup>

A high incidence of sexually acquired and sexually transmissible genital infections was found in adolescent girl attenders. Of the 48 with gonorrhoea, only 26 (54.2%) identified the male source contact, which reflects the casual nature of sexual encounters practiced by that population group. General practitioners and family planning clinics should be aware of the need for comprehensive microbiological investigation and cervical cytological examination of sexually active adolescents in whom genital tract infection is suspected.

Yours faithfully,  
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Table Results of cervical cytology and incidence of genital infections in 245 adolescent girls

	No (%)
Cervical cytology result:	
Inflammatory	7 (2.9)
Herpes simplex virus changes	2 (0.8)
Wart virus infection	39 (15.9)
Mild to moderate dysplasia	21 (8.6)
Negative	176 (71.8)
Lower genital tract infections:	
Gonorrhoea	48 (19.6)
Chlamydial infection	56 (22.9)
Trichomoniasis	24 (9.8)
Non-specific genital infection	25 (10.2)
Primary genital herpes	14 (5.7)
Vulval warts	85 (34.7)
Candida infection	21 (8.6)
Gardnerella infection	55 (22.4)